Amendments to the Drawings

The attached sheet of drawings includes changes to Fig. 15. Figure 15 has been amended to replace reference character "70" with reference character "470". A replacement page is submitted herewith. No new matter has been added.

Attachment: 17 Replacement Sheets
One Annotated Sheet Showing Changes

REMARKS

(1) **Restriction Requirement**

The Applicant gratefully acknowledges the Examiner's withdrawal of the restriction requirement.

(2) **Drawings**

The Examiner has objected to Figure 15 of the drawings due to an error in the reference character. The attached drawing sheet includes changes to Fig. 15. Figure 15 has been amended to replace reference character "70" with reference character "470".

The Examiner has objected to the drawings as being informal. Replacement pages for all of the figures are submitted herewith.

(3) **Specification**

The Examiner has objected to the specification for a minor grammatical error. The specification has been amended as directed by the Examiner.

(4) **Claim Rejections under 35 U.S.C. 112**

(a) Claims 5-14

The Examiner has rejected Claims 5-14 as dependent upon a cancelled claim. All of the claims have now been amended to depend either directly or indirectly from allowed claim 2. In that regard the Applicant respectfully submits that claims 5, 7 and 11-14 are now allowable.

(b) Claim 15

(i) Proper Antecedent Basis

In claim 15 the word "structural" has been deleted from "said first longitudinally extending structural member" as suggested by the Examiner. In the last portion of claim 15, the claim has been

amended to indicate that "said longitudinally extending structural member" is --- said second longitudinally extending member ---. Finally, "said longitudinally extending face" has been replaced with --- said laterally outwardly facing surface ---.

The Applicant believes that these three amendments correct the claim to match up with the appropriate antecedents.

(ii) Double Inclusion of Elements

The Examiner objected to the wording of the claim being confusing. and suggested that the wording amounted to a double inclusion of elements. In that regard, the Applicant has replaced the former "one-and-another" style language with language identifying a first post and a second post, and specifying that they be next adjacent to each other. The Applicant believes that this should eliminate any confusion.

(iii) Claim 16

Claim 16 has been cancelled and the language from claim 16 has been introduced into claim 15 by amendment.

(c) Claim 18

Claim 18 has been amended to add a period as directed by the Examiner.

(d) Claim 19

The Examiner has objected that the elected species does not read on claim 19 as formerly amended indicating that the claim is misdescriptive. The Applicant apologises for any confusion that this may have caused. The Examiner's point is well taken and the Applicant has amended claim 19 to indicate that it is withdrawn from prosecution as a none-elected species.

(5) **Claims 15-19 – Rejection Under 35 USC 102**

In the Office Action claims 15-19 were rejected under 35 USC 102(b) as being anticipated by US P 5,758,584 of Saxton. The rejection states: "... member **64** defines a wall as broadly claimed and as best understood—see Figure **4**". "Note also first longitudinally member **62** and second longitudinally member **64** with an outwardly facing cargo engaging face (Figure **4**)."

The Applicant respectfully disagrees

Item **64** is the outboard stringer of the top truss, those stringers being identified by Saxton as "a pair of longitudinally extending tubular steel side members **64** (Saxton, col. 5, lines 7 and 8).

It is notoriously well known in the rail road industry that the lading does not bear laterally against the top truss wings of a traditional style center beam car, such as Saxton. There are at least three good reasons for this.

First, the Rules do not permit it. The Rules require that the lading be tight against the posts, and that narrower bundles (if any) be stacked above wider bundles. This, by itself, precludes securing lading to the top truss wings. The Applicant has enclosed a copy of pages 73 – 82 of the "Association of American Railroads – Safety and Operations – AAR Open Top Loading Rules Manual, Section No. 5, Rules for Loading Forest Products and Miscellaneous Building Materials", for the Examiner's convenience. The Examiner may wish to consider page 74, note 4, page 75 notes 11 and 12, page 78, notes 3 and 4, and page 82, notes 4 and 10.

Second, given that the cars carry bundles of forest products (i.e., lumber), an attempt to lade the car such that bundles bear laterally against the stringers of the top truss wings (or eves, as they are sometimes called) would yield a number of practical problems. To start, the outside edge of the bundles would then tend to sit outside the AAR clearance profile for Plate C or Plate F cars, as may be applicable. Lashing lading to the outside of the wings would seem to be problematic in terms of load shifting. Further, even if it could be done within the clearance envelope, stacking lading to the height of the top truss wings may tend to raise the center of gravity too far. Center beam cars tend to be designed for a fully laded center of gravity very close to the 98" C of G limit above Top of Rail. Placing lading at a maximum outboard position, at maximum height, on an already high center of gravity car tends not to be a good idea. Persons of skill in the art would be very well aware of that.

Third, as can be seen in Saxton Figure **3**, if the lading were stacked against the sides of Saxtons' top truss wing stringers, the lading would stand vertically proud of the top of Saxton's bulkhead **40**. This would generally be considered unacceptable in center beam car service. For example, on traditional centerbeam cars, the presence of a top truss that extends laterally proud of the posts generally precludes lading from being loaded past the top of the bulkhead, since the underside of the top truss eve lies at a lower height than the upper end of the bulkhead, and the lading has to be secured against the posts below the eve. On a more recent type of car, a dropped deck center beam car lacking a top truss, the rules explicitly state "Load may not exceed top of bulkhead or center partition" See "Association of American Railroads – Safety and operations – AAR Open Top Loading Rules Manual, Section No. 5, Rules for Loading Forest Products and Miscellaneous Building Materials, Figure 75, page 1 of 2, end view, and page 2 of 2, note 4. One may also note the requirement in note 9, "packages must be loaded tightly against the center partition prior to tensioning Item F straps".

Further, the Applicant notes that claim language is to be interpreted in light of the specification as a whole through the eyes of a person skilled in the art. The Applicant respectfully submits that there is no indication in Saxton itself that item **64** is intended to present a lading bearing interface and the Applicant respectfully submits that it is unaware of any example in which the lateral wings of a top thrust present such a surface (as distinct from a narrow top chord which has been used recently for such a purpose). In that light the Applicant respectfully submits that the interpretation employed in the Office Action is significantly at odds with the understanding of the terminology by a person skilled in the art.

The Applicant also notes that in claim 15, the second longitudinally extending member runs along the first longitudinally extending member. While item **64** may be parallel to item **62** it can neither fairly be said to run along item **62**, nor can item **64** fairly be said to run "from said first post to said second post" as required in the claim either as presently amended, or as previously required before amendment in the previous style of claim language (which is thought not to have (or, equivalently in the language of the claim before amendment). Item **64** does not run from one post to an adjacent post. For these reasons, the Applicant respectfully submits that Saxton does not anticipate any of the claims presently pending in this case.

(6) **Claims 21 and 22**

The Office Action indicates that claims 20 and 21 would be allowable if rewritten in independent form. However in view of the amendments to claim 15, the Applicant respectfully submits that claims 20 and 21 are now allowable without amendment.

(7) **Claims 2-4**

The Applicant gratefully acknowledges the Examiner's determination that claims 2-4 are allowable.

As a result of this amendment, the Applicant submits that all of the claims are in a condition for allowance, and would appreciate early and favourable disposition of this matter. In the event that the claims may not be allowed, the Applicant would appreciate clarification with regard to the several above noted points.

Respectfully submitted,

Hahn Loeser & Parks LLP

Date: December 22, 2005

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Annotated Sheet Showing Changes

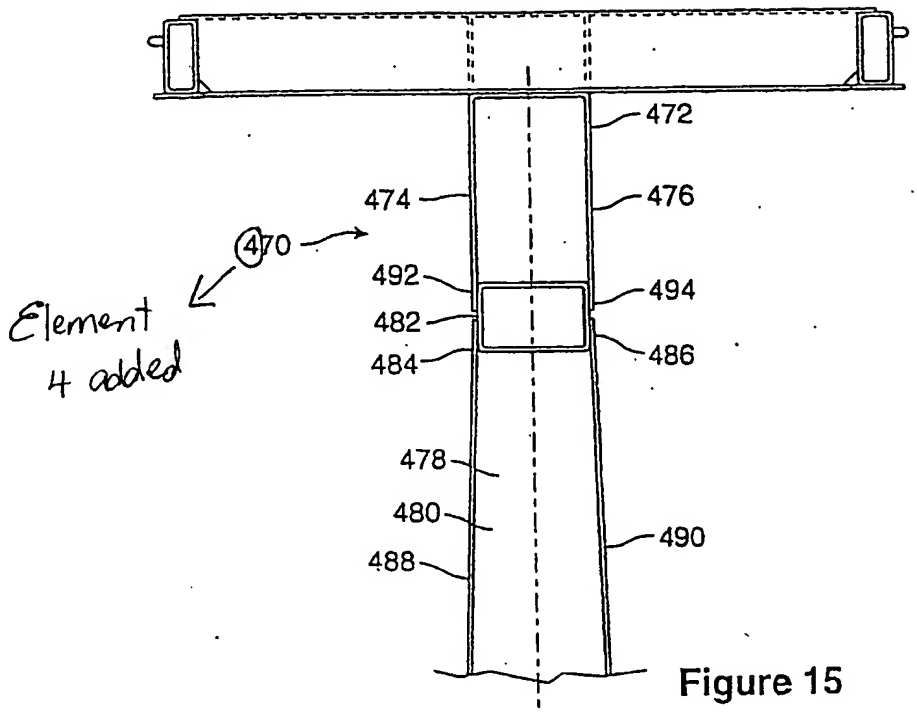


Figure 15

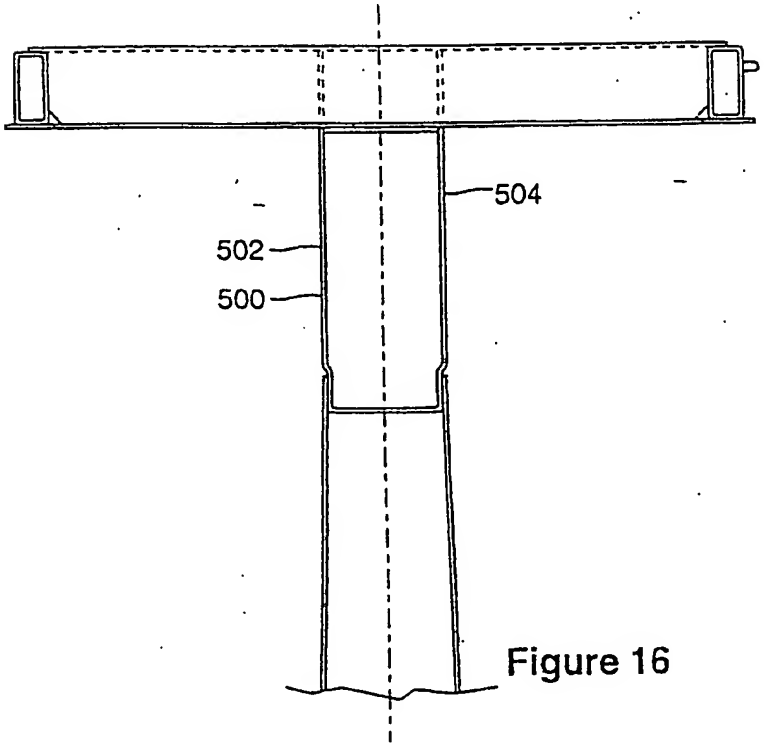


Figure 16

Association of American Railroads

Safety and Operations

AAR Open Top Loading Rules Manual

SECTION No. 5

Rules for Loading
Forest Products and Miscellaneous Building Materials

Adopted by the
Former Master Car Builders' Association
as Recommended Practice, 1896
Advanced to Standard 1908

Published February 1, 1960
Republished March 1, 2003

Published by the
Association of American Railroads
50 F Street NW, Washington, D.C. 20001-1564

Printed in U.S.A.

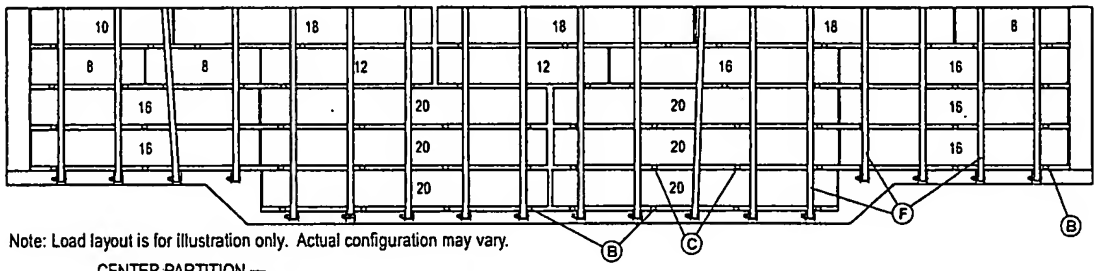
SECTION NO. 5

Part 1

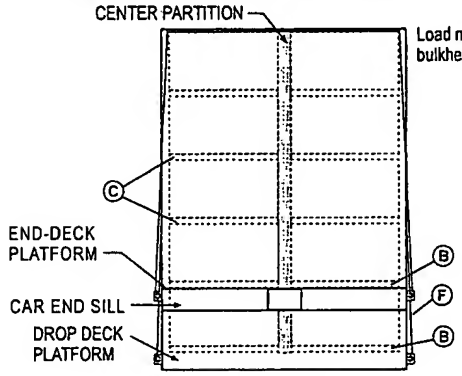
Rules Governing
Loading of Forest Products on Open Top Cars

Fig. 75 (New 07/04)

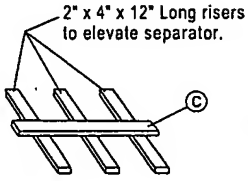
LUMBER, PACKAGED, NOMINALLY 33 IN. HIGH — FLATCARS, 73 FOOT, WITH DEPRESSED DECK, END BULKHEADS, FULL HEIGHT CENTER PARTITION AND CUSHIONING DEVICES



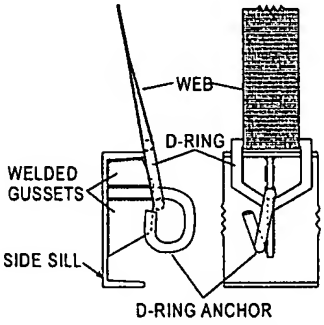
Note: Load layout is for illustration only. Actual configuration may vary.



END VIEW



(See Notes for application.)
SKETCH 1



ALT-F D-RING & ANCHOR
SKETCH 2

Item	No. of Pcs.	Description
A		Vacant.
B	2 per bottom package 14 ft long or less. Add 1 for each additional 4 ft or less in package length.	Bearing pieces: lumber, 2 in. x 4 in. minimum, width must be greater than height. Bearing pieces to be in one piece and preferably rough. Length at least equal to width of package but must not extend beyond width of car deck. Bearing pieces are to be located approximately 18 in. from each solid end of bottom layer packages with others, when required, equally spaced between.
C	2 per package 14 ft long or less. Add 1 for each additional 4 ft or less in package length.	Separators: lumber, 2 in. x 3 in. minimum, width must be greater than height, in one piece and preferably rough. Length must be equal to width of package. Locate approximately 12 to 18 in. from each end of package, with others when required, equally spaced between.
D	Optional	Stickers: when used, must be of uniform thickness throughout. Length of sticker must be equal to width of package. (Not shown in drawing.)
E	2 per package 14 ft long or less. Add 1 for each additional 4 ft or less in package length.	Package ties: high tension bands, 5/8 in. x .020 in for softwoods and 3/4 in. x .022 in. for hardwoods. Locate approximately 12 to 18 in. from each end of package, with others when required, equally spaced between. For softwoods, this banding may be substituted with approved non-metallic strapping as permitted in General Rule 19, of Section No. 1. (Not shown in drawing.)
F	Minimum 2 per top package 12 ft long or less. Add 1 for each additional 4 ft or less in package length.	Web tie-down assemblies: polyester webbing, 4 in. wide with a minimum 6,667-lb working load limit. Place strap over load, position vertically, and secure to side winches. Tension straps, using a 30- to 40-in. long winch bar per General Rule 20, from both sides of load to obtain uniform tension. There must be at least 2 wraps of webbing around the winch mandrel after tensioning. When practical, all strap assemblies adjacent to load must be applied.

Fig. 75 (New 07/04) (Concluded)

LUMBER, PACKAGED, NOMINALLY 33 IN. HIGH — FLATCARS, 73 FOOT, WITH DEPRESSED DECK, END BULKHEADS, FULL HEIGHT CENTER PARTITION AND CUSHIONING DEVICES

Item	No. of Pcs.	Description
Alternate Method of Attaching Web Tie-downs to Car		
Alt F	Minimum 2 per package up to 12 ft long or less. Add 1 for each additional 4 ft or less in package length.	Web tie-down assemblies: polyester webbing, 4 in. wide, equipped with D-rings at one end only. The assembly, including D-ring, must have a minimum 6,600-lb working load limit. The D-ring anchors must be designed to prevent the D-ring from becoming disengaged should slack develop in the webbing for any reason. (Refer to Sketch 2.) Winches and D-ring anchors are to be located in alternating order along the side of the car. Winches must be positioned opposite D-ring anchor points, and straps must be tensioned from alternating sides of the car to equalize strap tension on the load. Place straps over load and position perpendicular to side sills. There must be at least 2 wraps of webbing around the winch mandrel after tensioning. Tension with a 30-in. winch bar, or a 30-in., 3/4-in. square-drive socket wrench. When practical, all strap assemblies adjacent to load must be applied.

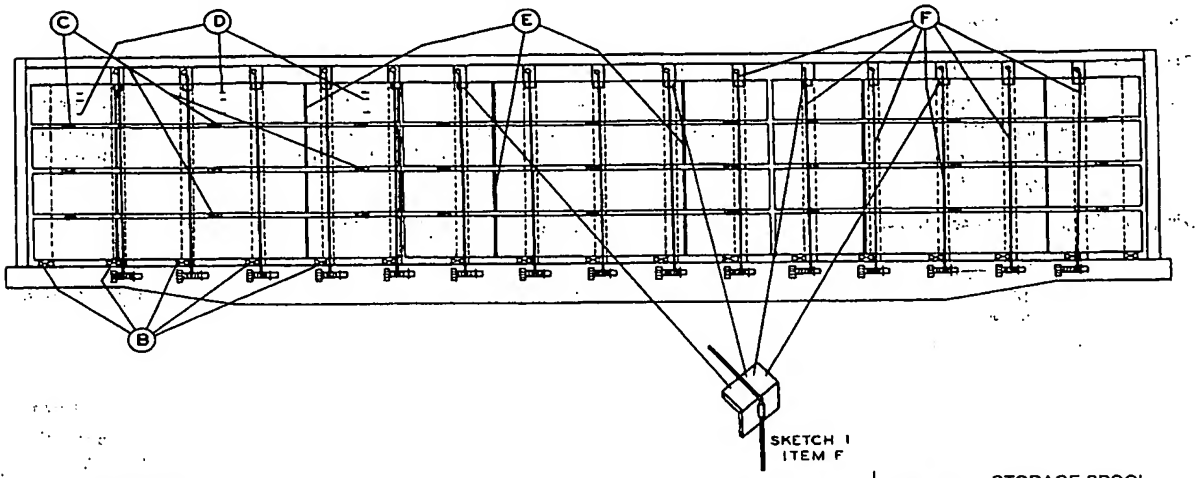
Notes:

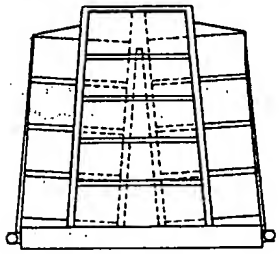
1. This is not a typical "centerbeam" flatcar. The car is equipped with permanent end bulkheads approximately 11-ft 4-in. high, center partition equal to the height of the end bulkheads, web tie-down assemblies, and riserless, non-canted deck with center depression. There are no overhanging eves at the top of the center partition and the web straps secure from car side to opposite car side. The deck depression is 33 in. below the end platforms and is 40-ft 6-in. long. The end platforms are each 16-ft 3-in. long. See drawing. The specific dimensions of this specialized car must be considered during load planning prior to loading the car.
2. Lumber smaller than nominally 2 in. x 4 in. is not permitted in this figure.
3. This figure includes cars having a total weight on rail capacity of 286,000 lb and less. The weight on both sides of the center partition must be as close as possible but must not exceed a 4,000-lb variance.
4. Height of load may not exceed the top of the end bulkhead.
5. At origin, voids, if any, must be in center of load and may not exceed a total of 24 in. in any layer.
6. If void is in other than the top layer, ensure that separators on the package above the void are no closer than 6 in. to the void, or the distance equal to the total aggregate lengthwise void space in the layer above the void being bridged, whichever is greater. The intent is that separators cannot be placed directly over the void or be located where they could drop into the void in the event that longitudinal shifting occurs during transit.
7. Maximum package height under this figure is 34-1/2 in. All packages in the same layer are to be of equal height.
8. The top surface of packages in the deck well is to be at the same height as the floor surface of the end decks, within a differential of plus or minus 3 in. If this height variation is from 1-1/2 in. to and including 3 in., the differential must be reduced to 1-1/2 in. or less. If necessary to bring the height variation to within 1-1/2 in. or less, risers are to be applied to increase height of separators per Sketch 1. When required, a minimum of three risers, 2 in. x 4 in. 12 in. long, are to be positioned longitudinally under each Item C to be affected. Spread risers equally across package width to evenly distribute weight. Avoid positioning risers on outside package boards when possible, but locate no closer than three inches from the outer edge of the package below. Secure each to the separator with two 8-D nails, or secure each to the package below in the same manner.
9. Packages must be loaded tightly against the center partition prior to tensioning Item F straps.
10. Packages less than 92-in. long must not be located in the top layer. Any package that is not covered by a package above it, is considered to be a top-layer package.
11. Random-length packages and packages less than 6 ft long are not permitted in this figure.
12. In loads containing mixed-width packages, wider packages must be loaded in bottom layers with narrower layers toward the top.
13. Laminated bearing pieces and separators are not permitted except to the extent described in Item C.
14. All web tie-down components must be inspected and applied in accordance with General Rule 20. When the location of a strap falls at a joint between top packages, it may be necessary to angle the strap slightly toward one package or the other to avoid the strap falling between the packages. In any case, the strap is to remain within 5 degrees of vertical as required in General Rule 20.
15. Protective covering/package wrap, if used, must be adequately secured to prevent displacement.

Reference the General Rules in Section No. 1 of the *Open Top Loading Rules Manual* for additional details.

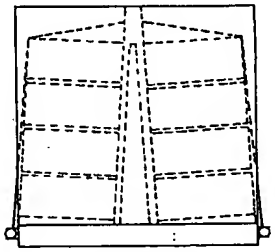
Fig. 54 (Rev. 03/03)
(New 9/77)

PACKAGED LUMBER, 6 FT LONG OR OVER—CENTER A-FRAME FLATCARS, WITH CABLE TIE-DOWNS

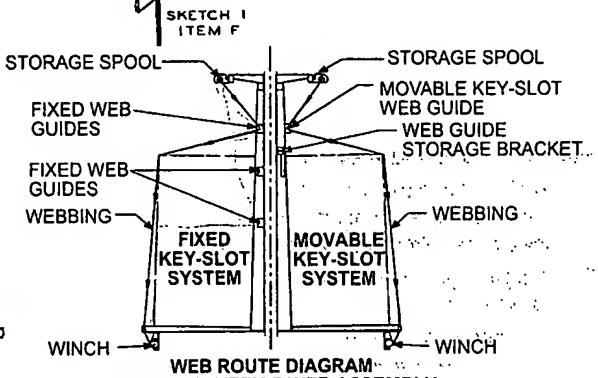




END VIEW
PARTIAL BULKHEAD



END VIEW
FULL BULKHEAD



WEB ROUTE DIAGRAM
ALTERNATE ITEM F WEB ASSEMBLY

Item	No. of Pcs.	Description
A		Vacant.
B	2 per package, 8 ft long or less.	Bearing pieces: cars are equipped with permanent floor bearing pieces wedged at 90° to A-frame.
C	2 each package 16 ft long or less. 3 if over 16 ft long.	Separators: lumber, 2 in. × 2 in. minimum. Height must not exceed width. Length must be equal to width of package. All separators in same layer separation must be in one piece. Locate approximately 18 in. from each solid end of package, with others when needed, equally spaced in between. Separators with minimum width of 3 in. may be secured to top or bottom of packages with Item E package ties. When attached to top of packages in the top layer of load, each separator must be secured to the package with one 10-D nail. (Use of separators is optional.)
D	Optional.	Stickers: when used, they must be uniform thickness throughout. Length of sticker must be equal to width of package.
E	2 per package.	Package ties: 1,600-lb minimum breaking strength, high tension bands or wire, except on 2 ft × 4 ft wide package, high tension bands or wire with minimum breaking strength of 1275 lb. Locate one tie about one-fourth the length from each end of package. This banding may be substituted with approved non-metallic strapping as permitted in General Rule 19. of Section No. 1.
F	2 per each top package 10 ft long or less. 3 per each top package over 10 ft.	Cables: 3/8-in. diameter, 8,800-lb minimum breaking strength. Cable assemblies must be equipped with edge protectors. Winch assemblies must be equipped with a device to maintain tension. Prior to tightening, there must be a minimum of 2 1/2 wraps of cable around the winch drum. When practical, all cables must be used, and must be free of kinks and tangles. Tension to be applied with the use of an 18-in. bar or 3/4-in. ratchet. Cables are to be secured to A-frame in slot nearest to top of package.

Fig. 54 (Rev. 03/03) (Continued)
(New 9/77)

PACKAGED LUMBER, 6 FT LONG OR OVER—CENTER A-FRAME FLATCARS, WITH CABLE TIE-DOWNS

Item	No. of Pcs.	Description
Alternate Item B—For cars not equipped with permanent bearing pieces		
Alt B	Min. 2 per package 8 ft long or less. Add 1 for each additional 4 ft.	Bearing pieces: lumber of one piece, preferably rough. Width must be 2 in. greater than height and the length equal to width of bottom package. Locate approximately 18-24 in. from each end of package with remaining pieces equally spaced. May be attached to package with Item E package ties.
Alternate Item F—For cars equipped with polyester top-mounted web-strap assembly and storage system		
Alt F	2 per each top package 10 ft long or less. 3 per each top package over 10 ft.	Web tie-down assemblies: polyester webbing, 4 in. wide with a minimum 5,000-lb working load limit. Web assembly must be an approved eave- or top-mounted web-strap assembly and storage system as listed in General Rule 20.11. Refer to end view of illustration for application of tie-down strapping. During application, all web strapping must be pulled from the top-mounted anchor and storage spool. The web must be routed through the web guide closest to the top of the load, over the load, and then to the fixed winch on the side sill. The winch directly in line with the top-mounted anchor and storage spool must be used. Thread at least 6 in. of webbing through the slot in the winch mandrel. Prior to tightening, there must be a minimum of 2 wraps of webbing around the winch mandrel. The strap is to be tensioned by the effort of one person using a winch bar 30 in. to 40 in. long. When practical, all straps must be used.

Notes and Additional Requirements:

1. Voids, if any, must be in center of load and kept to a minimum. Layers differing in combined length resulting in longitudinal void space, are to be configured so as to locate layers with the greatest void at the top of the load and descending in void length toward the bottom. Void spaces in excess of 12 in. must not be bridged or overlapped with package above.
2. Top packages on either side of a void space greater than 4 ft must be protected with one of the following methods to prevent package coring.
   2.1. Apply two 1 1/4 in. × .029 in. high tension bands encircling each package adjacent to the void. Locate approximately 12 in. from each solid end of package.
   2.2. Apply fencing-type mesh, plastic or wire (e.g., poultry wire or snow fencing), over the void-end of each package adjacent to the void. Overlap around ends and staple to the side of package to prevent displacement.
   2.3. Apply a transportation-type package wrap to each package adjacent to the void. The wrap must be of a bag-type covering all sides and the top of the package. The wrap must be a commercially available, industrial grade with the following minimum manufacturer-stated specifications and performance standards. The fabric is to have a polypropylene scrim (or equivalent) with a nominal 9 by 4 ppi weave; a polypropylene coating of at least 1.2 mil thickness; and a weight of at least 3.25 oz per square yard (110 gsm). The wrap must have a Mullen-burst rating of at least 210 psi (1449 kPa), in accordance with ASTM D3786, and must withstand cold-cracking to –20 °F as determined by specification FED 191 Method 5874. The wrapping must be adequately secured to the package with staples or comparable fastener to resist displacement by wind turbulence during transit.
3. Finished packages must have sides square and must be composed of pieces of uniform width and thickness. All packages must be loaded with the squared end towards ends of car.
4. The packages must be placed tight against the A-frame to prevent loosening of cables.
5. Packages must not exceed 48 in. in height. Overlapping of mixed height packages is permitted, provided the layer is maintained at an even height without the use of laminated separators.
6. Dunnage, attached or otherwise, must not be placed on top of permanent floor risers or bearing pieces.
7. Bottom packages must not overhang the outside edge of permanent bearing pieces by more than one half the width of the outside board in bottom packages.
8. Packages 6 ft long must not be located in the top or bottom layers.
9. Packages shorter than 6 ft long are prohibited.

The following revisions are effective January 1, 2004.

This is a revision to Fig. 54, Fig. 54-A, and Fig. 54-B, Section 5 of the *AAR Open Top Loading Rules Manual*. It modifies the specifications for applicable transportation wrapping. These changes also permit the use of acceptable flat-wrap transportation covering as an alternate method of restricting coring of lumber packages adjacent to void spaces greater than 4 ft. The affected figures will be revised as indicated herein.

Fig. 54, Revise Note 2 as follows:

{Delete current Note 2.1. Renumber Notes 2.2 and 2.3 as Notes 2.1 and 2.2 respectively. Add a new Note 2.3 as shown below. Refer to new the drawings of flat-wrap application on page 4 of these revisions, which will be added to the figure.}

Note 2. unchanged

2. Top packages on either side of a void space greater than 4 ft must be protected with one of the following methods to prevent package coring.

Delete Note 2.1

~~2.1. Apply two 1-1/4 in. x .029 in. high tension bands encircling each package adjacent to the void. Locate approximately 12 in. from each solid end of package.~~

Renumber Note 2.2 to 2.1

~~2.2.~~ 2.1. Apply fencing-type mesh, plastic or wire (e.g., poultry wire or snow fencing), over the void-end of each package adjacent to the void. Overlap around ends and staple to the side of package to prevent displacement.

Renumber Note 2.3 to 2.2 and revise as shown.

~~2.3.~~ 2.2. Apply a transportation-type package wrap to each package adjacent to the void. The wrap must be of a bag-type covering all sides and the top of the package. The wrap must be a commercially available, industrial grade with the following minimum manufacturer-stated specifications and performance standards. The polyolefin fabric or equivalent, is to have a ~~polypropylene scrim (or equivalent) with a nominal 9 by 4 ppi weave; a polypropylene~~ coating or composition capable of withstanding exposure to environmental elements, including moisture, for a minimum of 60 days without material degradation. ~~of at least 1.2 mil thickness; and a weight of at least 3.25 oz per square yard (110 gsm)~~. The wrap must have a material weight sufficient to meet all of the following performance criteria: ~~Mullen~~ A burst rating of at least 210 psi (1449 kPa), in accordance with ASTM D3786; ~~The wrap must~~ withstand cold-cracking to minus 20 °F as determined by specification FED 191 Method 5874; and resist trapezoidal tear to 40 lb average of warp and weft directions in accordance with ASTM D4533. During application, the wrapping must be pulled tight over the ends of the package and adequately secured to the package with staples or comparable fastener to resist displacement by wind turbulence during transit. If other than staples are used, the fastener must have a head area equivalent to at least 1/4 in. x 1/4 in. The size of the staples or fasteners must provide at least 7/16-in. penetration into the wood.

Add new Note 2.3

2.3. Apply a flat-type transportation wrap of the same performance specifications as described in Note 2.2. When used, flat wrap must be applied, folded, and secured as described in the drawing below. On all corners adjacent to the void, backup tabs at least 1 in. x 1 in. must be used under staples or comparable fasteners. Backup tabs must be made of water-resistant cardboard stock at least .024-in. thick, (similar to milk carton material), plastic at least .030-in. thick, or metal at least .007-in. thick. If other than staples are used, the fastener must have a head area equivalent to at least 1/4 in. x 1/4 in. The size of the staples or fasteners must provide at least 7/16-in. penetration into the wood.

Fig. 54 (Rev. 03/03) (Continued)
(New 9/77)

PACKAGED LUMBER, 6 FT LONG OR OVER—CENTER A-FRAME FLATCARS, WITH CABLE TIE-DOWNS

Notes and Additional Requirements (concluded):

10. When lumber of unequal lengths is included in the same package, the following variances are allowable:
    Solid 6-ft packages may include 8-ft lengths.
    Solid 8-ft packages may include 10-ft lengths.
    Solid 10-ft packages may include 12-ft and 14-ft lengths.
    Solid 12-ft packages may include 14-ft and 16-ft lengths.
    Solid 14-ft packages may include 16-ft and 18-ft lengths.
    Solid 16-ft packages and over may include additional lengths up to 6 ft longer.
11. Height of load must not exceed height of A-frame.
12. When load consists of mixed-width packages, wide packages must be placed on bottom tiers, with narrow packages above.
13. When shipping 2 in. × 2 in. material, 3 ft to 4 ft long, in packages 6 ft or 8 ft long, refer to Option A with accompanying specifications and notes.
14. When shipping 2 in. × 4 in. or larger material, 4 ft long, in packages 8 ft long, refer to Option B with accompanying specifications and notes.

Reference the General Rules in Section No. 1 of the *Open Top Loading Rules Manual* for additional details.

OPTION A
Palletized Short Material, 2 in. × 2 in. Minimum, 3 ft to 4 ft Long, in Packages 6 ft or 8 ft Long

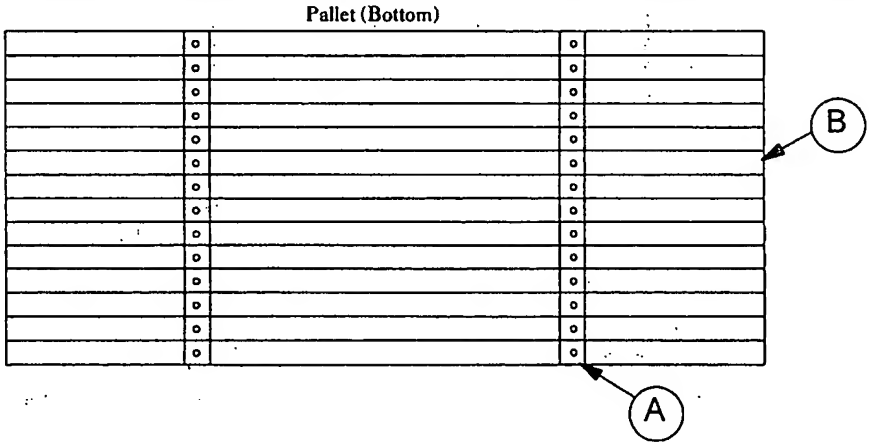
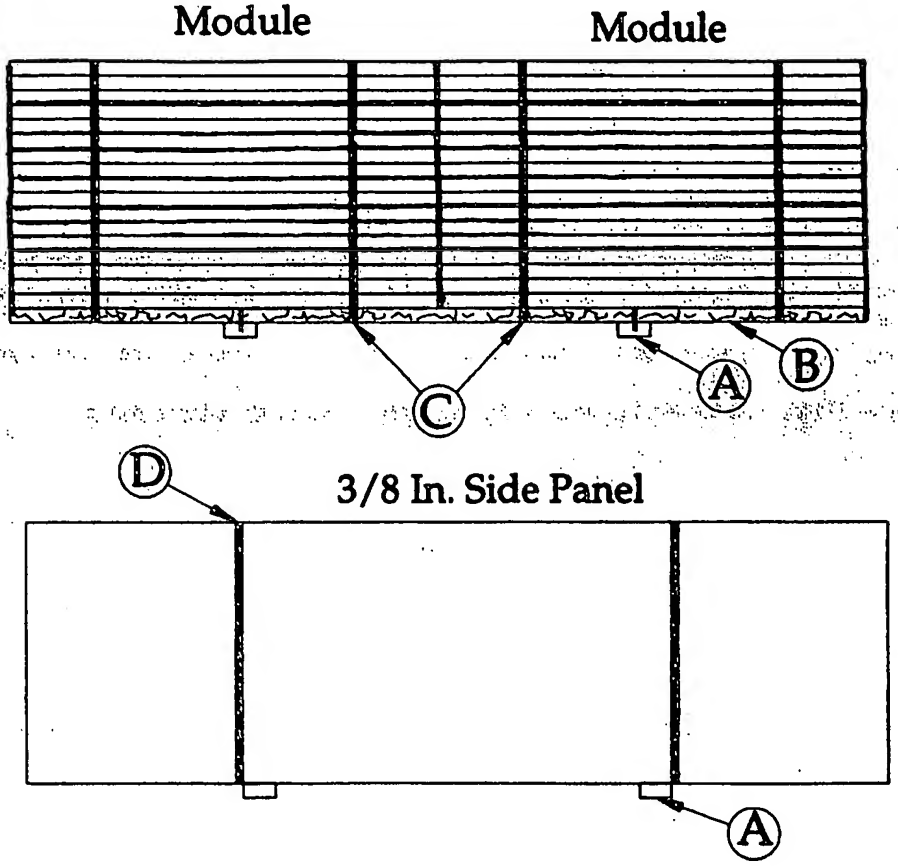


Fig. 54 (Rev. 03/03) (Continued)
(New 9/77)

PACKAGED LUMBER, 6 FT LONG OR OVER—CENTER A-FRAME FLATCARS, WITH CABLE TIE-DOWNS

OPTION A (CONTINUED)



Item	No. of Pcs.	Pallet Description
A	2 per each package.	Lumber: 2 in. × 4 in., length equal to width of package. Locate each approximately one-fourth the length in from each end of Items B.
B	14	Lumber: 2 in. × 4 in., length equal to length of package. Secure each piece to each Item A with one 10-D common nail.
		Module Description
C	2 per each module.	Each module consists of 30 pieces wide and 15 pieces high. To provide added stability, stickers of uniform thickness must be applied on two levels within the module. Two modules are located end-to-end on pallet and each secured with two 3/4 in. × .020 in. high tension bands located approximately 6 in. from each end encircling each module and pallet.
D	2 per each package.	Side panels: 3/8 in. Oriented strand board, chipboard, aspenite, or plywood. Side panels must be full length and height of packages. Secure each to pallet with four 6-D common nails equally spaced. Apply two 3/4 in. × .020 in. high tension bands, located approximately 2 ft in from each end encircling module, sides and pallet.

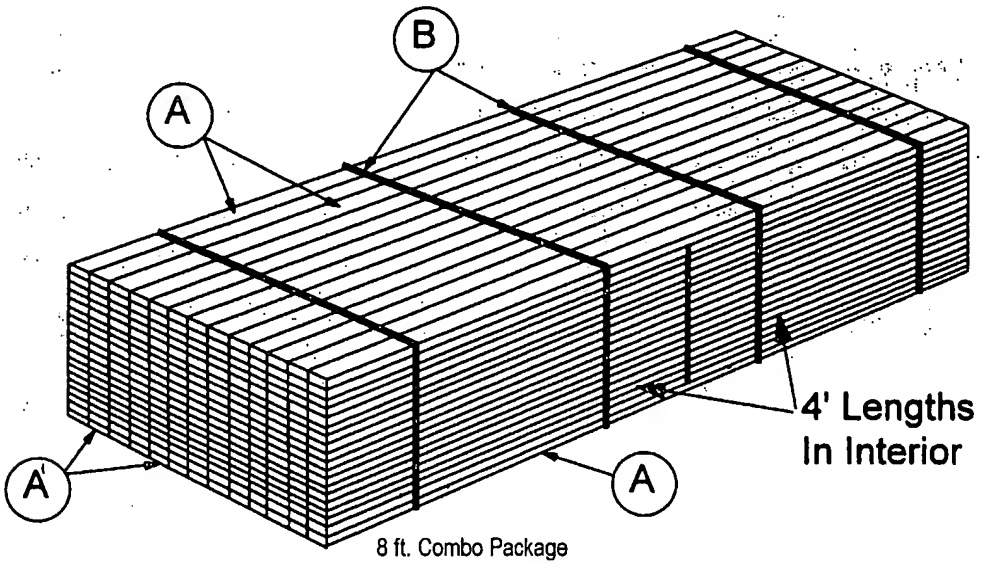
Notes and Additional Requirements:

1. Package size not to exceed 2 ft × 4 ft.
2. Packages will consist of a pallet, modules, package sides and be wrapped and marked on the side with the letter S to signify it contains shorts.
3. A maximum of 30% of the load can be made up of these packages. Packages containing shorts are not permitted in the top or bottom layers or next to a void.

Fig. 54 (Rev. 03/03) (Concluded)
(New 9/77)

PACKAGED LUMBER, 6 FT LONG OR OVER—CENTER A-FRAME FLATCARS, WITH CABLE TIE-DOWNS

OPTION B
Method for Shipping 4-ft Lumber Combined in 8-ft Packages



8 ft. Combo Package

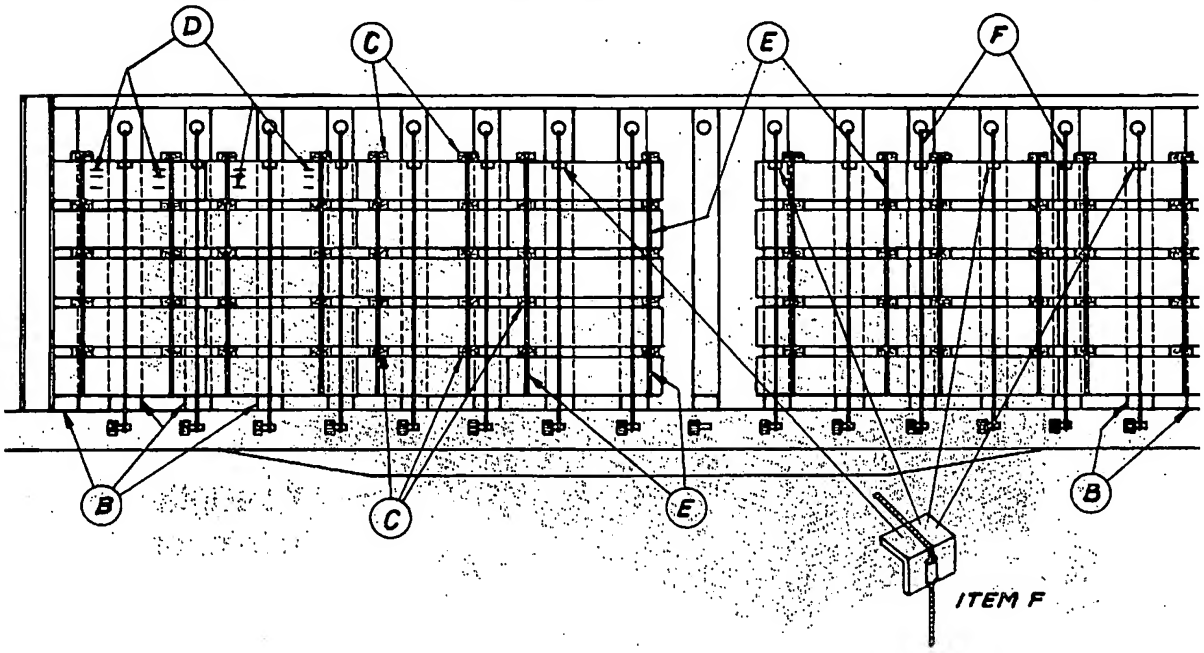
Item	No. of Pcs.	Description
A	As required.	Lumber: 8 ft long to comprise the top and bottom layers in the combo package as described in Note 1. below.
B	4 per package.	Packages ties: 1275-lb minimum breaking strength, high tension bands or wire. Locate one tie approximately 12 in. and another approximately 36 in. in from each end of combo package.

Notes and Additional Requirements:

1. Combo packages must be made up with a bottom layer of 8-ft-long lumber, equal to the width of the package. Two stacks of 4-ft-long lumber are to be placed on top of the bottom layer of 8-ft lumber, butted tight end to end with total width to equal the width of the 8-ft-long lumber in bottom layer. A top layer of 8-ft-long lumber is to be placed on top of the two stacks of 4-ft-lumber to complete the combo package. Item A package ties are to be applied to make a solid 8-ft package. See illustration.
2. Height of combo packages must not exceed 24 in.
3. Combo packages must not be located in the top or bottom layers or in any layer where lengthwise void exceed 12 in.

Fig. 54-A (Rev. 03/03)
(New 9/93)

LANDSCAPE TIMBERS, PACKAGED, 8 FT LONG—CENTER A-FRAME FLATCARS, WITH CABLE TIE-DOWNS



Item	No. of Pcs.	Description
A		Vacant.
B	2 per package.	Bearing pieces: cars are equipped with permanent floor bearing pieces wedged 90° to the A-frame.
C	2 per package.	Separators: lumber, 1 1/2 in. × 3 1/2 in. Width must be at least 2 in. greater than height. All separators in a layer must be of equal height and in one piece. Locate each approximately 12 in. to 18 in. from each end of package. Separators may be attached to top or bottom of packages with Item E package bands. If separators are located on top of packages, all packages in the top layer must have separators secured with one 10-D nail in addition to the Item E package bands.
D	2 per layer.	Stickers: veneer strips, 1/6 in. × 4 in., length equal to width of package. All stickers must be of uniform thickness. Locate between each layer in package, approximately 18 in. in from ends of package.
E	2 per package.	Package bands: 2,000-lb minimum breaking strength. Locate each approximately 12 in. to 18 in. from each end of package, but outside of Item D stickers.
F	2 per each top package.	Cables: 3/8-in. diameter, 8,800-lb minimum breaking strength. Cable assemblies must be equipped with edge protectors. Winch assemblies must be equipped with a device to maintain tension. Prior to tightening, there must be a minimum of 2 1/2 wraps of cable around the winch drum. When practical, cables must be used, and must be free of kinks and tangles. Tension to be applied with the use of an 18 in. bar or 3/4 in. ratchet. Cables are to be secured to A-frame in slot nearest to top of package.

Alternate Item B—For cars not equipped with permanent bearing pieces

Alt B	Min. 2 per package 8 ft long or less. Add 1 for each additional 4 ft.	Bearing pieces: Lumber of one piece, preferably rough. Width must be 2 in. greater than height and the length equal to width of bottom package. Locate approximately 12–18 in. from each end of package with remaining pieces equally spaced. May be attached to package with Item E package bands.

Notes and Additional Requirements:

1. Void, if any, must be in center of load and kept to a minimum.
2. Packages must not exceed 26 in. in height and 48 in. in width.
3. Packages must be placed tight against A-frame to prevent loosening of cables.
4. Height of load must not exceed height of A-frame.
5. All packages in a layer must be of equal height except in the top layer where a minimum height of 12 in. is permitted.

Fig. 54-A (Rev. 03/03) (Concluded)
(New 9/93)

LANDSCAPE TIMBERS, PACKAGED, 8 FT LONG—CENTER A-FRAME FLATCARS, WITH CABLE TIE-DOWNS

Notes and Additional Requirements (concluded):

6. Top packages on either side of a void space greater than 4 ft must be protected with one of the following methods to prevent package coring.

   6.1. Apply two 1-1/4 in. × .029 in. high tension bands encircling each package adjacent to the void. Locate approximately 12 in. from each solid end of package.

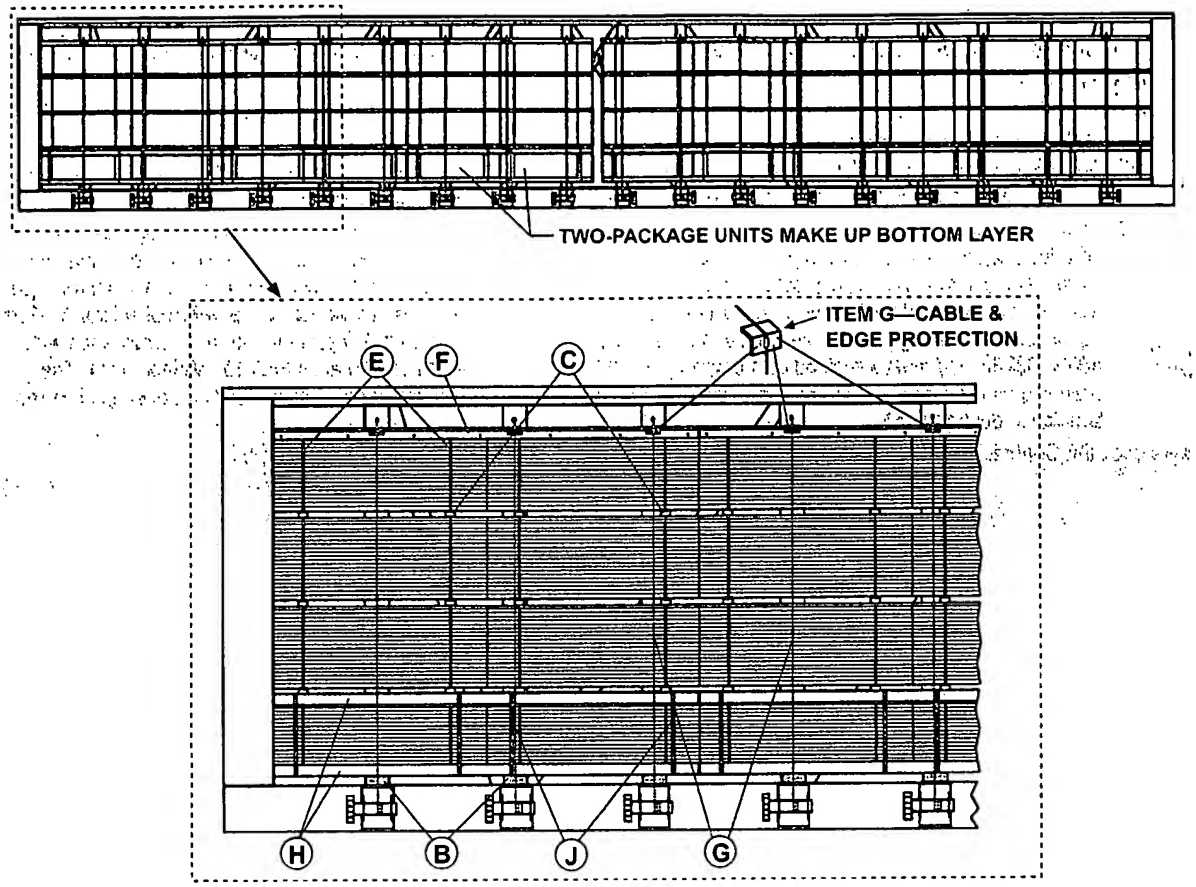
   6.2. Apply fencing-type mesh, plastic or wire (e.g., poultry wire or snow fencing), over the void-end of each package adjacent to the void. Overlap around ends and staple to the side of package to prevent displacement.

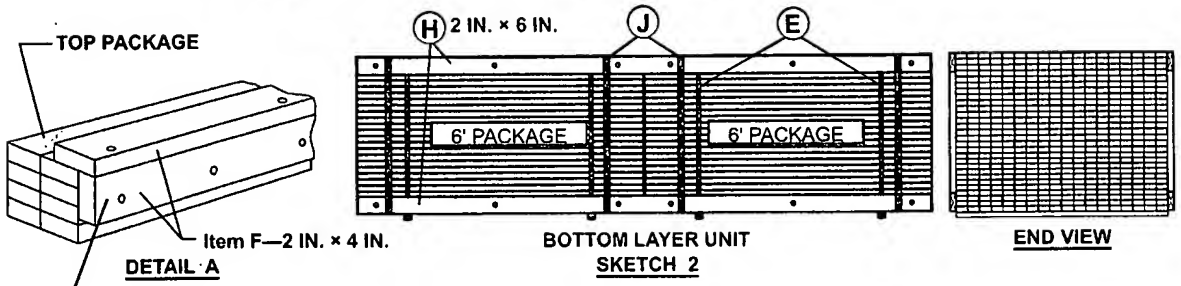
   6.3. Apply a transportation-type package wrap to each package adjacent to the void. The wrap must be of a bag-type covering all sides and the top of the package. The wrap must be a commercially available, industrial grade with the following minimum manufacturer-stated specifications and performance standards. The fabric is to have a polypropylene scrim (or equivalent) with a nominal 9 by 4 ppi weave; a polypropylene coating of at least 1.2 mil thickness; and a weight of at least 3.25 oz per square yard (110 gsm). The wrap must have a Mullen-burst rating of at least 210 psi (1449 kPa), in accordance with ASTM D3786, and must withstand cold-cracking to –20 °F as determined by specification FED 191 Method 5874. The wrapping must be adequately secured to the package with staples or comparable fastener to resist displacement by wind turbulence during transit.

Reference the General Rules in Section No. 1 of the *Open Top Loading Rules Manual* for additional details.

Fig. 54-B (Rev. 03/03)
(New 6/97)

LUMBER, 4 FT TO 8 FT LONG, PACKAGED—CENTER A-FRAME FLATCARS, WITH CABLE TIE-DOWNS





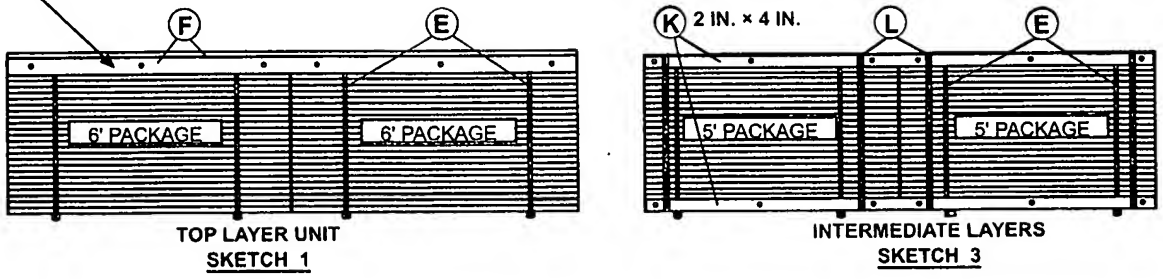


Fig. 54-B (Rev. 03/03) (Continued)
(New 6/97)

LUMBER, 4 FT TO 8 FT LONG, PACKAGED—CENTER A-FRAME FLATCARS, WITH CABLE TIE-DOWNS

Item	No. of Pcs.	Description
A		All packages in the top and bottom layers must consist of two packages joined end-to-end and referred to as units. Refer to drawings and these specifications for details.
B	Minimum 2 per unit.	Bearing pieces: cars are equipped with permanent floor bearing pieces wedged 90° to the A-frame.
Alternate Item B—For cars not equipped with permanent bearing pieces		
Alt B	Minimum 2 per package.	Bearing pieces: lumber of one piece, preferably rough. Width must be 2 in. greater than height and the length equal to width of bottom package. Locate approximately 12–18 in. from each end of package, with remaining pieces, if used, equally spaced. May be attached to package with Item E package ties. **Note:** When Alt. Item B is required, Items H and J may be omitted provided all packages in the bottom layer are 6 ft long or over.
C	Minimum 2 per package.	Separators: lumber, 2 in. × 2 in. minimum. Height must not be greater than width. Length to be equal to width of pile and in one piece. Locate approximately 12 in. from each end of package. Separators with a minimum width of 3 in. may be secured to top or bottom of packages in the bottom and intermediate layers with Item E package ties. Separators must not be attached to the top of packages in the top layer. (Use optional.)
D	Minimum 2 per separation in each package.	Stickers: minimum size 3/8 in. × 1 1/2 in. Length must be equal to, but not greater than, width of package. When used, they must be of uniform thickness throughout. Not shown on drawings. (Use optional.)
E	2 per package.	Package ties: 1,600-lb minimum breaking strength, high tension bands or wire, except on packages 26 in. or less in height, high tension bands or wire with a minimum breaking strength of 1,275 lb. Locate one tie about 12 in. from each end of package. This banding may be substituted with approved nonmetallic strapping as permitted in General Rule 19. of Section No. 1.
F	1 cap per unit.	Top corner cap: each cap assembly to consist of two pieces lumber, minimum 2 in. × 4 in., length equal to length of unit package. Locate one piece along the top outside edge of one unit (comprised of two end-to-end packages) in top layer, positioning the 4-in. width vertically. Make flush with top and ends of packages and secure to side of packages with 16-D nails spaced about every 12 in. Locate second piece along top of packages and flush with the outside edge of the first piece, forming a corner angle over unit. Secure top piece to edge of lower piece with 16-D nails spaced approximately 24 in. apart as shown in drawings. Any top-layer package that is not fully protected by two Item G cables must be part of unit comprised of two packages, each protected by Item F. See Sketch 1 and Detail A.
G	Minimum 2 per each top unit.	Cables: 3/8-in. diameter, minimum of 8,800-lb breaking strength. Cable assemblies must be equipped with edge protectors. Winch assemblies must be equipped with a device to maintain tension. Prior to tightening, there must be a minimum of 2 1/2 wraps of cable around the winch drum. All cables must be used and must be free of kinks and tangles. Tension to be applied with the use of an 18-in. bar or 3/4-in. ratchet. Cables are to be secured to A-frame in slot nearest to top of top package.
		Method A—Bottom Layer Preparation To be used for combining two packages into a unit for loading on the bottom layer of load. Units can be formed from the combination of two packages of any length totaling a minimum of 8 ft long.
H	4 per each unit.	Unit boards: lumber, 2 in. × 6 in., length equal to length of the unit. Locate boards flush with the top and bottom of two end-to-end packages, comprising a unit, on the front and back side. Secure each board to each individual package with a minimum of three 16-D nails evenly spaced. All packages in bottom layer less than 8 ft long must be part of a unit comprised of two packages. See Sketch 2 and End View.
J	4 per each unit.	Unit bands: 3/4 in. × .022 in. high tension bands with no substitution. Locate two bands around each package and Items H in each unit, approximately 12 in. from the end of packages. See Sketch 2 for preparation of units.

Fig. 54-B (Rev. 03/03) (Concluded)
(New 6/97)

LUMBER, 4 FT TO 8 FT LONG, PACKAGED—CENTER A-FRAME FLATCARS, WITH CABLE TIE-DOWNS

Item	No. of Pcs.	Description
		Method B—Intermediate Layer Preparation Required Only for Packaged Lumber Less than 6 ft Long To be used for combining two packages into a unit for loading on the intermediate layers of load. Units are to be formed from the combination of two packages of any length totaling a minimum of 8 ft.
K	4 per each unit.	Unit boards: lumber, 2 in. × 4 in., length equal to length of the unit. Locate boards flush with the top and bottom of two end-to-end packages, comprising a unit, on the front and back side. Secure each board to each individual package with a minimum of three 16-D nails evenly spaced. All packages less than 6 ft long in the intermediate layers must be part of a unit comprised of two packages. See Sketch 3.
L	4 per each unit.	Unit bands: 3/4 in. × .022 in. high tension bands with no substitution. Locate two bands around each package and Items K in each unit, approximately 12 in. from the end of packages. See drawings in Sketch 3 for preparation of units.

Notes and Additional Requirements:

1. This figure is intended for packaged dimensional lumber 4 ft to less than 8 ft in length that, when placed in the top layer, could result in less than two Item G cables protecting the package. Lumber 8 ft long may be included in this figure and should be located in the top layer first to minimize the need for Item F top corner caps, and then in the bottom layer. (Lumber 8 ft long and over may be loaded to Fig. 54 in this Section.)
2. Voids, if any, must be in center of load and kept to a minimum.
3. Finished packages must have sides square and must be composed of pieces of uniform length, width, and thickness.
4. Packages must be placed tight against A-frame to prevent loosening of cables.
5. Packages must not exceed 48 in. in height. All packages in same layer must be of equal height.
6. Bottom units must not overhang the outside edge of permanent bearing pieces by more than one half the width of the outside board in bottom package.
7. All units in the top and bottom layers must be composed of packages of equal width.
8. Any full length package that is not covered by a package above it is considered to be a top layer package and must be protected by Item F.
9. Top packages on either side of a void space greater than 2 ft must be protected with one of the following methods to prevent package coring. The following measures must be applied to the package prior to applying Item F corner cap.
   - 9.1. Apply two 1 1/4 in. × .029 in. high tension bands encircling each package adjacent to the void. Locate approximately 12 in. from each solid end of package.
   - 9.2. Apply fencing-type mesh, plastic or wire (e.g., poultry wire or snow fencing), over the void-end of each package adjacent to the void. Overlap around ends and staple to the side of package to prevent displacement.
   - 9.3. Apply a transportation-type package wrap to each package adjacent to the void. The wrap must be of a bag type covering all sides and the top of the package. The wrap must be a commercially available, industrial grade with the following minimum manufacturer-stated specifications and performance standards. The fabric is to have a polypropylene scrim (or equivalent) with a nominal 9 by 4 ppi weave; a polypropylene coating of at least 1.2 mil thickness; and a weight of at least 3.25 oz per square yard (110 gsm). The wrap must have a Mullen-burst rating of at least 210 psi (1449 kPa), in accordance with ASTM D3786, and must withstand cold-cracking to –20 °F as determined by specification FED 191 Method 5874. The wrapping must be adequately secured to the package with staples or comparable fastener to resist displacement by wind turbulence during transit.
10. Height of load must not exceed height of A-frame.
11. Intermediate layers are those located between the top and bottom layers. Any packages shorter than 6 ft in an intermediate layer must be prepared in accordance with Method B. If only one package is shorter than 6 ft in such a layer, it must be combined with a 6-ft package as described.

Reference the General Rules in Section No. 1 of the *Open Top Loading Rules Manual* for additional details.